

In the Claims:

1-3 (CANCELLED)

4. (CURRENTLY AMENDED) A method of programming cyclical machines having an industrial controller, comprising the steps of:

providing the industrial controller with a runtime system, said controller having prioritized running levels and tasks, with at least one sequential running level being created;

formulating a machine sequence in a sequential program, said sequential program comprising sequential instructions running with a first priority and including at least one specific mechanisms-instruction that enables a waiting for condition to be satisfied to be carried out with high-a second priority being higher than the first priority and after the waiting for condition has been satisfied, to carry out the subsequent program sequence with high-the second priority up to a defined user-programmed end from where on following instructions are executed with the first priority, and

utilizing said sequential program in said controller.

5. (CURRENTLY AMENDED) The method of programming according to claim 4 and 7, wherein the running levels are created from the group consisting of system levels , user levels, and system levels and user levels.

6. (PREVIOUSLY PRESENTED) The method of programming according to claim 4, wherein the running level model is clocked and wherein the basic clock is derived from any of an internal

timer, an internal clock of a communication medium, an external device or a variable which belongs to the technological process.

7. (PREVIOUSLY PRESENTED) The method of programming according to claim 1, wherein the running levels are selected from the group consisting of an assigned system, user program, and an assigned system and user program.

8. (NEW) A method of programming cyclical machines having an industrial controller, comprising the steps of:

providing the industrial controller with a runtime system, said controller having prioritized running levels, wherein a first level having a first priority executes a plurality of tasks in parallel;

providing a plurality of first instructions for said tasks being executed by the industrial controller in the first running level;

providing at least a second instruction for said tasks that enables a waiting for condition to be satisfied, wherein said second instruction causes the industrial controller to execute said second instruction and following instruction in a second running level having a second priority being higher than the first priority if the condition is met;

providing at least a third instruction for said tasks which causes the industrial controller to execute the following instructions in said first running level;

programming a plurality of tasks to be executed in parallel including sequences of said first, second and third instructions.

9. (NEW) The method of programming according to claim 8, wherein the running levels are created from the group consisting of system levels, user levels, and system levels and user levels.

10. (NEW) The method of programming according to claim 8, wherein the running level model is clocked and wherein the basic clock is derived from any of an internal timer, an internal clock of a communication medium, an external device or a variable which belongs to the technological process.

11. (NEW) The method of programming according to claim 8, wherein the running levels are selected from the group consisting of an assigned system, user program, and an assigned system and user program.

12. (NEW) The method of programming according to claim 8, wherein the condition to be satisfied is the determination of a predefined actual value.

13. (NEW) The method of programming according to claim 12, wherein the actual value is a position or sensor value.

14. (NEW) The method of programming according to claim 8, wherein the condition to be satisfied is the edge change within a signal.

15. (NEW) The method of programming according to claim 8, wherein the industrial controller executes a plurality of background tasks wherein each background task can be assigned to a different prioritized running level.